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Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:

Strakova, J. (2003). International Large-Scale Studies of Educational Achievement - The Involvement of the Czech Republic. *Sociologický časopis / Czech Sociological Review*, 39(3), 411-424. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-56392>

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International Large-scale Studies of Educational Achievement – The Involvement of the Czech Republic

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Abstract: Since 1989 the Czech educational community has had very limited experience with education measurement. Comparative data on education outcomes were not available at either the national or the international level. In the 1990s, the situation changed dramatically. The Czech Republic joined international organisations specialising in comparative studies and several international enterprises in the field of education measurement. Consequently, there appeared also the first attempts to address the issue nationally. In this article the author gives an overview of the international large-scale surveys on educational achievement that have taken place in the Czech Republic since 1990 and summarises their main findings. At the end of the article, the author provides brief information about the national initiatives in this field. Within a short time period, the surveys produced extremely rich data sources of very good quality. The aim of the article is to inform the scientific community about these sources, to raise interest among its members in using them in their own research, and thus to contribute to their further exploitation.

Sociologický časopis/Czech Sociological Review, 2003, Vol. 39, No. 3: 411–424

During communist rule, the Czech educational system was very centralised, with no need perceived for carrying out standardised evaluations of educational achievement at the national, at the school or at the student level. There were no institutions specialising in educational measurement; no such discipline formed a part of the curriculum at teacher training faculties or in social science studies. There was no information available about the quality of the outcomes of the Czech educational system in an international context. The traditionally shared notion about the high quality of Czech education was derived from the success of Czech students in international Olympiads. It was not pointed out that these prestigious competitions included only the best students in each nation, and their results did not reveal anything about the achievement of average or even under-achieving students.

However, there was no political will to obtain more precise information. Participation in an international comparative study in education was out of the question. The same situation was experienced in almost all socialist countries, with the exception of Poland and Hungary. These two countries participated in compar-

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ative studies during the communist period. Hungary in particular was a very active member of the International Association for the Evaluation of Educational Achievement (IEA),¹ which co-ordinated almost all international comparative initiatives in educational achievement in the second half of the 19th century.

The Czech Republic became a member of IEA in 1992, together with the Slovak Republic and several other former socialist countries,² and it joined in the Third International Mathematics and Science Study that was in progress at that time. The Czech Republic became a very active IEA member and participated in almost all its studies launched in the 1990s. In the second half of the 1990s it also joined comparative activities initiated by the Organisation for Economical Co-operation and Development (OECD). In the following section a brief overview of completed studies is provided.

International studies carried out in the Czech Republic

Third International Mathematics and Science Study (TIMSS)

The IEA Third International Mathematics and Science Study (1991–1997) focused on student achievement in mathematics and science.³ It was conducted at five grade levels⁴ in 43 countries. The data collection took place in 1995.

¹ The *International Association for the Evaluation of Educational Achievement* (IEA) is an independent, international co-operative of national research institutions and governmental research agencies. Each educational system is represented by one organisation. At the present time, the IEA has 58 members. Its primary purpose is to conduct large-scale comparative studies of educational achievement, with the aim of gaining a more in-depth understanding of the effects of policies and practices within and across systems of education. Since its inception in 1958, the IEA has conducted about 20 research studies of cross-national achievement. The IEA studies focus on the output of educational systems – that is, the attitudes and educational achievements of students – and attempt to relate these outputs to those inputs that have an effect on them. At the heart of most IEA studies is a cross-national sample survey of student achievement in one or more school subjects. Student achievement is measured by administering objective tests to a sample of the students, who have been selected as representative of national populations. Information about the students' backgrounds, attitudes and interests is collected by means of self-report questionnaires. Questionnaires are also adopted for collecting information from teachers about their experiences, attitudes, and classroom practices, and from school principals about the characteristics of schools that the students attended. IEA operates at the primary and secondary level of schooling.

² Latvia, Lithuania, Russian Federation, Bulgaria and Romania.

³ Science included physics, chemistry, and biology, and Earth science, which represents about one-fourth of the traditional Czech geography curriculum.

⁴ The target populations were defined as follows: Population 1 – two grades that include the highest proportion of nine-year-olds (grade 3 and 4); Population 2 – two grades that include the highest proportion of thirteen-year-olds (grades 7 and 8); Population 3 – the highest grade of secondary school (in schools offering a four-year programme, fourth year, in schools offer-

Students were tested in mathematics and science, and extensive information about the teaching and learning of mathematics and science, home contexts, school characteristics and policies was collected from students, teachers,⁵ and school principals from self-report questionnaires.

At the basic school level the content of the assessment represented an overlap of the math and science curricula of participating countries. The test consisted of multiple-choice and open-ended items.⁶ A sub-sample of students at the basic school level also took a performance assessment test, which consisted of short experimental tasks that assessed the student's ability to design and perform an experiment and to make correct conclusions on the basis of gathered data.⁷

At the upper secondary level, students were tested in mathematics and science literacy,⁸ and specialised tests in mathematics and physics were also designed for students with the highest portion of mathematics and physics in their curricula.⁹

The international co-ordinating centre of TIMSS was located at Boston College in Boston in the United States. In the Czech Republic, the study was co-ordinated from the Institute for Educational Research in Prague, and involved 500 schools, 16 700 students, 1120 teachers and 485 school principals.¹⁰ In the TIMSS data collection in 1995 it was the first time that standardised tests had been administered in the Czech schools. The results of the study can be found in: Beaton et al. 1996a; Beaton et al. 1996b; Martin et al. 1997; Mullis et al. 1997; Mullis et al. 1998.

ing a three-year programme, third year etc.). In the Czech Republic, all secondary schools offering at least two years of study were included in Population 3. The sample was stratified into two strata – gymnasiums and professional schools. In each population, sampling was done independently. A two-staged sample design was applied. The first stage consisted of a sampling of schools, and the second stage of a sampling of one intact classroom from each target grade in the sampled schools. In the Czech Republic, special education schools were excluded from the assessment.

⁵ Teacher questionnaires were administered to mathematics and science teachers teaching in selected classes. Teacher data were not collected from teachers at the upper secondary level.

⁶ Assessment frameworks were established on the basis of a detailed study of the textbooks and curricular documents of all participating countries. Open-ended items were marked by trained markers according to international standards. In each population test items were assigned to several student booklets that were randomly distributed to students. One scale was derived for mathematics achievement and one scale for science achievement. IRT methodology was used for scale construction.

⁷ In the Czech Republic, the performance assessment test was administered in grade 8.

⁸ It was a first serious attempt to introduce the concept of mathematic and scientific literacy into an international study.

⁹ In the Czech Republic, these specialised tests were administered to all gymnasium students.

¹⁰ The instruments were administered according to detailed international rules by trained employees of the Czech school inspectorate.

Third International Mathematics and Science Study – Repeat (TIMSS-R)

The IEA TIMSS-R (1997–2000) was a repeat of the TIMSS assessment among students attending grade 8. The main data collection took place in 1999. The tests were parallel to the tests administered in 1995. The questionnaires represented a slightly shortened version of the questionnaires administered in 1995. The assessment took place in 38 countries. Twenty-six of these 38 countries participated also in TIMSS 1995 which enabled these countries to measure the trends in their children's mathematics and science achievement and in the school and home contexts for learning.

The TIMSS-R was conducted by the International Study Centre at Boston College. In the Czech Republic it was co-ordinated by the Institute for Information on Education. The assessment took place at 150 schools and included 3600 students, 700 teachers and 148 school principals¹¹. The sample was stratified according to type of school.¹² The results of the study can be found in: Martin et al. 2000; Mullis et al. 2000.

Reading Literacy Study (RLS)

The IEA Reading Literacy Study (1988–1992) was conducted in 32 countries. The main data collection took place in 1991. The Czech Republic administered the same study in 1995. The study aimed at measuring the level of reading comprehension in three areas: narrative texts, expository texts (continuous texts) and document texts (non-continuous texts: graphs, tables, maps etc.). The study focused on nine-year-old and thirteen-year-old students.¹³ Although the test included few open-ended items, the international comparison was based exclusively on multiple-choice items.¹⁴ Extensive information about reading instruction, home contexts and school characteristics and policies was collected from students, teachers¹⁵ and school principals from self-report questionnaires.

The international co-ordinating centre of the study was located at the University of Hamburg in Germany. In the Czech Republic the study was co-ordinated by the Institute for Educational Research in Prague. The study involved 5520 students, 260 school principals and 260 teachers from 130 schools.¹⁶ The results of the study can be found in Elley 1994.

¹¹ Administration was performed by the Czech School Inspectorate in exactly the same way as in 1995. Also, the scales were constructed in the same way as in 1999.

¹² The sample consisted of 90 elementary schools and 60 multi-year gymnasiums.

¹³ The target population was defined as a grade with the highest proportion of nine-year-old and fourteen-year-old students. In the Czech Republic this included grades 3 and 8. The sample was drawn in two stages. The first stage consisted of a sampling of schools, and the second stage of a sampling of one intact classroom from the target grade in the sampled schools.

¹⁴ All students responded to the same set of items.

¹⁵ Teachers teaching the mother tongue in the classes selected for the study filled in teacher questionnaires.

¹⁶ In the Czech Republic, only basic schools with both levels of basic education were included in the sample. In each school one class in grade 3 and one class in grade 8 were selected.

Progress in International Reading Literacy Study (PIRLS)

IEA PIRLS (1999–2003) followed the IEA RLS in a younger population.¹⁷ It studied reading literacy and the experiences students have in learning to read, both at home and in school. The main data collection took place in 2001; the number of participating countries was 35. PIRLS assessed two reading purposes (literary and informational), and examined reading literacy behaviour and attitudes. The first aspects formed the basis of the written test of reading comprehension.¹⁸ The second aspect, behaviour and attitudes, was addressed by the student questionnaire, which, together with the parents, teacher and school questionnaires, gathered information about home and school factors which are associated with the development of reading literacy, and about the larger context in which children live and learn.¹⁹

The International Co-ordination Centre of PIRLS was at Boston College. In the Czech Republic the study was co-ordinated from the Institute for Information on Education. It included 3022 students from 141 schools and their parents, and Czech language teachers.²⁰ The results of the study can be found in Mullis et al. 2003.

Civic Education Study (CIVED)

The IEA Civic Education Study (1994–2002) was carried out in two phases and included 28 participating countries. In the first phase, researchers in several countries conducted qualitative case studies that examined the context and meaning of civic education. The observations from the case studies were then used to develop an instrument for gathering information about students' civic knowledge and their civic attitudes and engagement. The main data collection took place in 1999. The standard target population included fourteen-year-old students.²¹ The content domains covered democracy and citizenship, national identity, and social cohesion and diversity. The instrument consisted of five types of items measuring the students' knowledge

This means an exclusion of schools containing only primary level and multi-year gymnasia. Special education schools were also excluded from the study. The teachers in the selected schools, who were provided with detailed instructions, administered the tests.

¹⁷ The target grade was defined as the upper of the two adjacent grades with the most nine-year-olds. In the Czech Republic, as well as in most participating countries, this is the fourth grade. PIRLS used a two-staged sample design. The first stage consisted of a sampling of schools, and the second stage of a sampling of an intact classroom from the target grade in the sampled schools.

¹⁸ Test items were assigned to several booklets that were randomly distributed to students. Three scales were constructed: reading overall, reading for literary purposes, and reading for information.

¹⁹ Teacher questionnaires were administered to the teachers of the mother tongue. PIRLS was the only large-scale survey in education that also included a parent questionnaire.

²⁰ The tests were administered by teachers in selected classrooms.

²¹ The standard population by definition included all students enrolled on a full-time basis in the grade in which most students aged 14 were found at the time of testing (grade 8 in the

of fundamental principles of democracy; their skills in interpreting political communication; their concepts of democracy and citizenship; their attitudes related to trust in institutions, their nation, opportunities for immigrants, and the political rights of women; and their expectations for future participation in civic related activities.²² Questionnaires were administered to teachers and school principals.

Phase Two was co-ordinated at the Humboldt University in Berlin, Germany. In 18 countries an additional survey of students aged between 16 and 18 was also conducted. The instrument for this population was slightly but not significantly modified.²³ In the Czech Republic, the study was co-ordinated from the Institute for Information on Education. It included 6900 students, 376 teachers and 298 school principals from 300 schools. The results of the study can be found in Torney-Purta et al. 2001.

Programme for International Student Assessment (PISA)

The OECD Programme for International Student Assessment (1997–2007) was developed in the OECD INES project to produce indicators on student achievement on a regular basis.²⁴ In contrast to previous international assessments it does not concentrate on 'school' knowledge, but aims at measuring how well students perform beyond the school curriculum. Although the first assessment domains of reading literacy, mathematical literacy and scientific literacy are closely related to subjects learned at school, PISA concentrates on the value of the skills acquired beyond the school gates by applying literacy in a broader sense. It assesses young people's capacity to use their knowledge and skills in order to meet real-life challenges, rather than merely looking at how well they have mastered a specific school curriculum.

majority of countries). In the Czech Republic the sampling and administration of the CIVED study was combined with TIMSS-R study. Both studies tested the same students and were administered by the same members of the Czech School Inspectorate.

²² All students were administered the same instrument. The test consisted only of multiple-choice items. According to IRT methodology three achievement scales were constructed: civic education overall, knowledge of democratic principles, and skills in interpreting political communication.

²³ The populations tested differed in grade (11 or 12) and in proportion of cohort covered by the study (0.39 to 0.99). The results are thus not strictly comparable between countries. In the Czech Republic, the additional survey included students in the third year of their secondary study (grade 12). The cohort coverage was 0.78. For this population an additional achievement scale of economical literacy was constructed.

²⁴ The aim of the initiative was to secure a regular supply of high-quality indicators for the publication *Education at a Glance*. The publication includes indicators on selected areas of education. Indicators on the students' achievement were previously derived from the data gained in IEA studies. This approach was regarded as dissatisfactory in a long-term perspective. The OECD stressed a policy orientation, while IEA studies had a rather more academic orientation.

The frameworks serving as a foundation for test development are not based on careful study of the school curricula of participating countries but on the opinions of distinguished authorities all over the world about what is important to learn in order to be well prepared for adult life.²⁵

The assessment is designed for ten years. A measurement of student performance in reading literacy, mathematical literacy, and scientific literacy will take place every three years.²⁶ The first data collection took place in 2000. The second data collection is planned for spring 2003. Competencies across disciplinary boundaries are of growing importance in PISA as it develops over time. PISA 2000 analysed the students' approaches to learning and beliefs in their own abilities, motivation and engagement, and other aspects of student attitudes, under the heading 'self-regulated learning'. In 2003, PISA will specifically assess the ability of students to solve problems.

Extensive information was collected from students and school principals in self-report questionnaires. The main focus of the student questionnaire was to get high-quality information about the student's home background.²⁷

Unlike previous studies, PISA does not test students attending one particular grade. The target population consists of students born in one calendar year. In PISA 2000, students born in 1984 were tested. In selected schools, students were selected randomly from among all the students born in 1984.²⁸ No intact classes were included in the survey.²⁹

Twenty-eight OECD member countries and four other countries carried out the first PISA survey in 2000. Another thirteen countries conducted the same survey in 2002. PISA is co-ordinated by governments of participating countries and through OECD. The international co-ordinating centre is the Australian Council for Educational Research located in Melbourne. In the Czech Republic, the study is co-ordinated from the Institute for Information on Education.

²⁵ Frameworks for individual testing domains were developed by expert groups that consisted of experts from various geographical and cultural regions, and were repeatedly reviewed by all experts and policy-makers from all participating countries.

²⁶ In each phase, one education domain will receive special attention. In PISA 2000, four scales in reading were derived (reading overall, retrieving information, interpreting texts, reflection and evaluation), one scale in mathematics, and one scale in science. All students received a score in reading literacy; two-thirds of the students also received a score in mathematics and/or in science.

²⁷ One of the main goals of the PISA study was to examine the equity issues. Thus, very detailed information concerning student home background was collected. Among other information, students also gave detailed information on their parents' occupations in an open-ended format that was later recoded to ISCO codes.

²⁸ PISA used a two-staged stratified sample design. The first stage consisted of a sampling of schools within each stratum, and the second stage of a sampling of 35 students from all students attending a selected school who were born in 1984.

²⁹ As no intact classes were tested, teacher questionnaires were not administered in PISA.

The main data collection in 2000 included 253 schools, 9400 students and 253 school principals.³⁰ In addition to the defined population, in the Czech Republic, students born in 1982 and studying in the third year of sampled upper secondary schools were also included in the study. The aim of this extended survey was to estimate the differences in performance of students leaving different secondary schools and to determine the 'value added' of these different tracks. More information and the results of the study can be found in OECD 1999, OECD 2000, OECD 2001.

Summary of findings

The findings of the international studies performed in the Czech Republic in the past decade cannot be directly compared or combined. Although the studies explored the same educational domains, their intentions and contents varied. Also, the target populations and sampling procedures were not identical. The main restriction impeding comparison is represented by the different set of countries participating in each of the studies.³¹ All the limitations mentioned above prevent us from making detailed conclusions relating to the skills and knowledge of students in individual domains and their development over time. However, the information that was gained allows us to make several general conclusions, which are supported by a series of observations consistent across all the studies.

Achievement

In comparison with OECD countries the Czech compulsory school students attain average or slightly below-average results in reading literacy [Straková and Tomášek 1995, Straková et al. 2002, Mullis et al. 2003], average results in mathematics [Straková et al. 1996, Straková et al. 1997, Straková et al. 1998, Palečková et al. 1998, Palečková and Tomášek 2001] and above average results in science [Straková et al. 1996, Straková et al. 1997, Straková et al. 1998, Palečková et al. 1998, Palečková and

³⁰ The sampling frame included all basic and secondary schools because students born in 1984 were among basic school and among secondary school students. Also, for the first time, the special education schools were included in the study. The sample was stratified into the following six strata: special education schools, basic schools, multi-year gymnasiums, four-year gymnasiums, secondary technical and vocational studies concluding with a school-leaving examination (ISCED 3A), secondary vocational study concluding with vocational examination (ISCED 3C).

³¹ The students' results are reported on scales that are based on data from all participating countries. In order to make exact comparisons with a subset of countries the data should be re-scaled. The plain ranking of a country that is sometimes reported is very misleading because the set of countries and the range of their students' knowledge vary significantly across various studies. For example, South American, Arab and African countries participating in IEA studies usually have much lower performance levels than OECD countries.

Tomášek 2001, Palečková and Straková 2002]. In a single-shot survey of civic education Czech students achieved results close to the average [Křížová et al. 2001, Procházková and Raabová 2002].

The results in reading literacy are consistent over time, showing a slightly better performance among students in primary school than students in higher grades of compulsory education. For Czech students it is easier to work with non-continuous texts than with continuous ones. They have difficulties with retrieving information from expository texts and with reflecting on the form or content of the texts.

The results in mathematics and science showed a decline between 1995 and 1999 in both subjects, while in mathematics the decline was statistically significant. This decline could be explained by the fact that in 1996 the basic school was extended by one year. Some topics were not covered at the time of testing, as the curriculum had become less rushed than before, when students were expected to acquire all important skills and knowledge by the age of fourteen. The students that were assessed had also not yet reached the period of preparation for the entrance examination into secondary school, at which time they review all content covered during compulsory school study.³²

Czech students achieve better results in the tasks requiring factual knowledge or the application of routine procedures. Conversely, they fail in the tasks requiring the application of knowledge and skills in an unknown context requiring independent thinking and creativity [Sekce měření výsledků vzdělávání 2002].

The findings cited above correspond very well with the structure and emphasis of the Czech education system. The scientific subjects traditionally receive a great deal of attention and are heavily represented in the Czech curriculum. Conversely, the mother tongue receives less attention than in other educational systems.³³ The curriculum for the Czech mother tongue stresses grammar. Skills like reading comprehension, reasoning, or taking a critical stance are not being developed in Czech language classes. Students are also not encouraged to read and argue in other subjects. The fact that the Czech basic school curriculum is overloaded with factual knowledge and does not pay enough attention to independent thinking and creativity has been widely discussed during the past two decades. However, factual knowledge still dominates in the classrooms and is generally viewed as the main outcome of the education process. Factual knowledge is also the core of entrance

³² In 1995 students tested in TIMSS were in their last grade of basic education and were in the stage of preparation for entrance examinations for secondary schools. They studied mainly mathematics and Czech language and were reviewing also all main basic school subjects. This period is usually accompanied with higher effort in all subjects because for entrance procedures students need good marks.

³³ For example, PISA 2000 showed that Czech fifteen-year-old students have on average 5 science lessons per week, while the OECD average was 4 lessons. The mathematics lessons were close to the average (3.7 in the Czech Republic, 4.0 is the OECD mean), lessons in the mother tongue were less frequent (3.6) than the OECD mean (4.2).

examinations at both the secondary and tertiary level. Teachers in basic and secondary schools stress factual knowledge because they feel responsible for preparing the students for the entrance examinations, and they are also often evaluated according to their students' success.

Inequalities

Gender differences

Huge differences between Czech boys and girls – favouring boys – were found repeatedly in science and mathematics. Somewhat smaller differences – favouring girls – were discovered in reading literacy. No differences were found in the field of civic education. The gender differences in mathematics and science in the Czech Republic are among the largest to be found in the OECD countries. As in many other education systems, in the Czech Republic gender differences also increase with age. Despite these gender differences girls have better marks at school in all the tracked educational domains.

Although the large gender differences between boys and girls in science and mathematics were repeatedly pointed out in connection with the international surveys in this field, the issue has not received any attention from either policy-makers or the public.

Differences between students attending different types of schools

The surveys repeatedly reveal large differences in the achievement of students attending different types of schools [Sekce měření výsledků vzdělávání 2002]. At the lower secondary level there are large differences between special education schools, common basic schools, basic school classes with extended curriculum in a particular subject (for example, classes specialising in foreign languages) and six- and eight-year gymnasiums. At the upper secondary level there are large differences between students attending six- and eight-year gymnasiums, students attending four-year gymnasiums, students of technical secondary and students of vocational secondary schools. Analysis of the data gained in the PISA 2000 survey showed that the Czech Republic ranks among the countries where the students' results and the type of school attended by the students are strongly dependant on the education and occupation status of their parents [OECD 2001, OECD 2002]. In the Czech Republic, students are highly differentiated along socio-economic lines. The educational system is very selective and the selection starts at a very young age. The Czech Republic belongs among the OECD countries with the highest percentage of students educated in special education schools [Keydata 2002].³⁴ In the tables com-

³⁴ More than 5% of the age cohort.

paring the age when the first selection takes place, the Czech Republic, with the first selection at age 11, is situated just behind Germany and Austria, with the first selection at age 10. However, these comparisons do not take into account the fact that Czech students sit their first entrance examinations at the age of 8, when they apply for classes specialising in foreign language education. These classes are attended by about 10% of the age cohort.

Neither the structure of the educational system nor the teaching methods and attitudes facilitate the mediating of disadvantages caused by the student's home background. According to PISA 2000, Czech teachers do not give the students enough personal care. The vast majority of Czech students reported that they did not receive personal support from their teachers and that the teachers were not interested in their students individually.

The international studies show that students at the end of vocational studies have insufficient general education in all main education areas [Straková et al. 1998; Straková et al. 2002; Procházková and Raabová 2002]. This is particularly striking owing to the fact that, in all the studies described above, the students were not required to demonstrate academic knowledge and competence, but rather their ability to solve problems related to real-life situations (for example, tasks related to renting an office or painting a bridge in TIMSS 1995, tasks related to labour market situations or shopping in PISA, tasks investigating economic literacy in CIVED). As was mentioned above, Czech students are expected to acquire all important skills and knowledge at the compulsory-school level. After that, only students attending academic secondary schools (gymnasiums) continue with a full general education. The studies show that the quality of education received by vocational students deserves more attention, as these students constitute about one-third of all secondary school leavers.

National Activities

In the Czech Republic, students do not take any standardised tests during their educational careers. Nor has any system for regularly monitoring educational outcomes been established.³⁵ Two attempts to perform limited monitoring using tests were performed by the Czech school inspection at the beginning of the 1990s. Also, there is no state programme that focuses on the assessment of the results of individual schools. Quality control is the responsibility of school inspectors who pay regular visits to each school.

Nevertheless, there are two non-state evaluation agencies that have been operating since the mid-1990s, which carry out assessment activities at schools on a

³⁵ Quality monitoring and standardised testing are not common in Central European countries, except for Hungary, which has run a national monitoring system since 1995. Hungary regularly tests sub-samples of selected age groups to get information about the level of student knowledge in selected subjects and their development in time.

voluntary basis, and schools that decide to undertake such assessments cover the costs of participation. The agencies (KALIBRO and SCIO) offer the schools the opportunity to measure their outcomes comparatively. The assessment instruments include the following subjects or study areas: Czech language, mathematics, social sciences, science, English language, German language and an aptitude test. Participating schools receive results for their school overall, and for participating classrooms and individual students. The SCIO agency also organises a comparative testing for individual students, to give them an opportunity to compare their knowledge in chosen subject areas with students from throughout the country.

In 2001, a White Paper was published that proposed changes in educational policies, including those regarding standardised examinations and national monitoring. A preliminary decision to introduce a written standardised component into the secondary-school-leaving examinations (*maturita*) in order to ensure the comparability of education provided by individual schools, as well as to simplify the entrance examination for tertiary education, was made by the Ministry of Education in 1997. In 1997, a pilot test on a limited sub-sample of schools was conducted. In 1998 and 1999, a full sample of all students taking the school-leaving examination was included in the pilot study. In 1998, the students took an aptitude test, a Czech language test, an English or German language test and a mathematics test that had two levels of difficulty. In 1999, the aptitude test was not administered. More than 100 000 students from more than 1700 schools participated in the pilot studies. Limited information about the home background and educational career was also collected from these students. The analyses of the data from the pilot studies confirmed the findings from international surveys [ÚIV 1998].

Since 2001, the school-leaving pilot testing has become voluntary. The schools can download tests from the Internet and administer them independently. According to a statement of the Minister of Education in February 2003, the standardised component in the school-leaving examination, if approved by Parliament, will become a part of the examination in 2008. More information regarding national assessment activities can be found in Krampová and Straková 2001.

Conclusion

In this report, we gave an overview of all important initiatives in the field of educational assessment that have taken place in the Czech Republic since 1990. We also summarised the main findings of international comparative studies. The findings, together with indicators available in comparative publications like *Education at a Glance* (OECD), *Keydata* (Eurydice), *Statistical Yearbook* (UNESCO), provide a very complex picture of the strengths and weaknesses of the Czech education system and offer guidance for decisions relating to its desirable development. This is the information for policy makers. The scientific community is encouraged to make use of the data sources for further studies. The data sources, without any doubt, have

yet to be fully exploited, and valuable information is still available in the data. International surveys in educational measurement can also serve education specialists as a rich methodological source for national activities in this field.

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